WHAT IS CLAIMED IS:

1. A high-power semiconductor laser, in which a waveguide structure is formed in a light-emitting semiconductor unit; a plurality of waveguides for propagating light wave is provided to the waveguide structure, and the boundary of each waveguide serves as a reflective surface for reflecting light wave; a plurality of interfaces for reflecting or transmitting light wave is formed by extending the waveguide to intersect with the cleaved facets of the light-emitting semiconductor unit, in which at least an interface is used for transmitting light; the width of the waveguide is more than 10μm; and the direction of each waveguide is not perpendicular at least to the direction of a partial section of a interface connected with that waveguide.

2. The semiconductor laser according to claim **1**, wherein the waveguide structure is provided with a waveguide capable of propagating light wave, and both ends of the waveguide are extended to reach the cleaved facet of the light-emitting semiconductor unit and form two interfaces there.

3. The semiconductor laser according to claim **2**, wherein an inclined angle defined by the waveguide of the waveguide structure and the normal of a connected corresponding interface is 3-50 degrees.

4. The semiconductor laser according to claim **2**, wherein the waveguide of the waveguide structure has an optimum deflection angle.

5. The semiconductor laser according to claim **1**, wherein the waveguide structure has at least two waveguides capable of propagating light wave, and the cleaved facet of the light-emitting semiconductor unit forms two interfaces, in which each interface is connected with a corresponding waveguide so that light wave is propagating through every waveguide sequentially.

6. The semiconductor laser according to claim **5**, wherein the waveguide structure has two waveguides capable of propagating light wave, and the inclined angle defined by each waveguide of the waveguide structure and the normal of the interface is 3-40 degrees.

7. The semiconductor laser according to claim **5**, wherein at least a waveguide of the waveguide structure has a proper deflection angle.

8. The semiconductor laser according to claim **1**, wherein the waveguide structure has at least two waveguides capable of propagating light wave, and four interfaces are formed by the cleaved facets of the light-emitting semiconductor unit, in which each interface is connected with a corresponding waveguide such that light wave is transmittable through every waveguide.

9. The semiconductor laser according to claim **8**, wherein the waveguide structure has three waveguides capable of propagating light wave, and each interface is connected with a corresponding waveguide for transmitting light wave through every waveguide in order.

10. The semiconductor laser according to claim **8**, wherein the waveguide structure has four waveguides capable of propagating light wave, and each interface is connected with a corresponding waveguide for transmitting light wave through every waveguide in order.

11. The semiconductor laser according to claim **8**, **9**, or **10**, wherein at least a waveguide of the waveguide structure has a proper deflection angle.

12. The semiconductor laser according to claim **9**, wherein two interfaces are formed on two opposite cleaved faces of the light-emitting semiconductor unit respectively; the total four interfaces are connected with respective corresponding waveguides, in which two of three waveguides form a parallel configuration while the third waveguide is connected with two interfaces of those two waveguides located at different cleaved facets such that light wave can be transmitted through every waveguide; an inclined angle defined by those two waveguides in parallel and the normal of respective interfaces is 3-40 degrees; and the inclined angle defined by the third waveguide and its corresponding interface is the double of that defined by those two waveguides and the normal of their corresponding interfaces.

13. The semiconductor laser according to claim **9**, wherein two interfaces are formed respectively on two opposite cleaved facets of the light-emitting semiconductor

unit; each of those four interfaces is connected with a corresponding waveguide, in which two of those three waveguides construct a staggered formation, and the third waveguide is provided with a proper deflection angle and connected to two interface on the same lateral different cleaved facets of the two waveguides to enable light wave to transmit through every waveguide.

14. The semiconductor laser according to claim **1**, wherein the waveguide structure has at least three waveguides capable of propagating light wave, and the cleaved facet of the light-emitting semiconductor unit forms five interfaces, in which each interface is connected with a corresponding waveguide such that light wave can be transmitted through every waveguide.

15. The semiconductor laser according to claim **14**, wherein the waveguide structure has four waveguides capable of transmitting light wave, and each interface is connected with a corresponding waveguide to enable light wave to propagate through every waveguide.

16. The semiconductor laser according to claim **14**, wherein the waveguide structure has at least five waveguides capable of transmitting light wave, and the cleaved facet of the light-emitting semiconductor unit forms five interfaces, in which each interface is connected with a corresponding waveguide such that light wave can be transmitted through every waveguide.

17. The semiconductor laser according to claim **14**, **15** or **16**, wherein at least a waveguide has a proper deflection angle.

18. The semiconductor laser according to claim **1**, wherein the waveguide is in the form of a V-type or X-type or W-type or N-type or α-type or any combination of these types。

19. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein the waveguide structure is a ridge formation.

20. The semiconductor laser according to claim **18**, wherein the ridge formation is made by dry etching or chemical etching.

21. The semiconductor laser according to claim **18**, wherein two laterals of the ridge formation are lower than the ridge formation itself.

22. The semiconductor laser according to claim **18**, wherein the laterals of the ridge are etched down with the etched depth from 50 nm to 200 nm higher or lower than an active layer.

23. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein the waveguide structure is a buried-hetero structure.

24. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein the equivalent refractive index inside the waveguide structure is larger than outside the waveguide structure.

25. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein light wave is supposed to reflect on an inside reflective surface of the waveguide structure at two positions at least.

26. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein the width of the waveguide in the waveguide structure is greater than 10μm.

27. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein, except for outputting light wave, there is at least an interface coated with a thin film or multiple thin films to have high reflection..

28. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein incident light wave would enter an external-cavity configuration through at least an interface, then the light wave is reflected back to the light-emitting semiconductor unit.

29. The semiconductor laser according to claim **28**, wherein the external-cavity configuration has a mirror as the feedback reflector.

30. The semiconductor laser according to claim **28**, wherein the external-cavity configuration has a grating as the feedback reflector.

31. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein the width of the waveguide in the waveguide structure is designed relatively wider.

32. The semiconductor laser according to claim **1**, **2**, **5**, **8** or **14**, wherein the interface may be formed on a broken interface of crystal boundaries of the semiconductor or by dry etching.